JP2007282660

Fig. 1

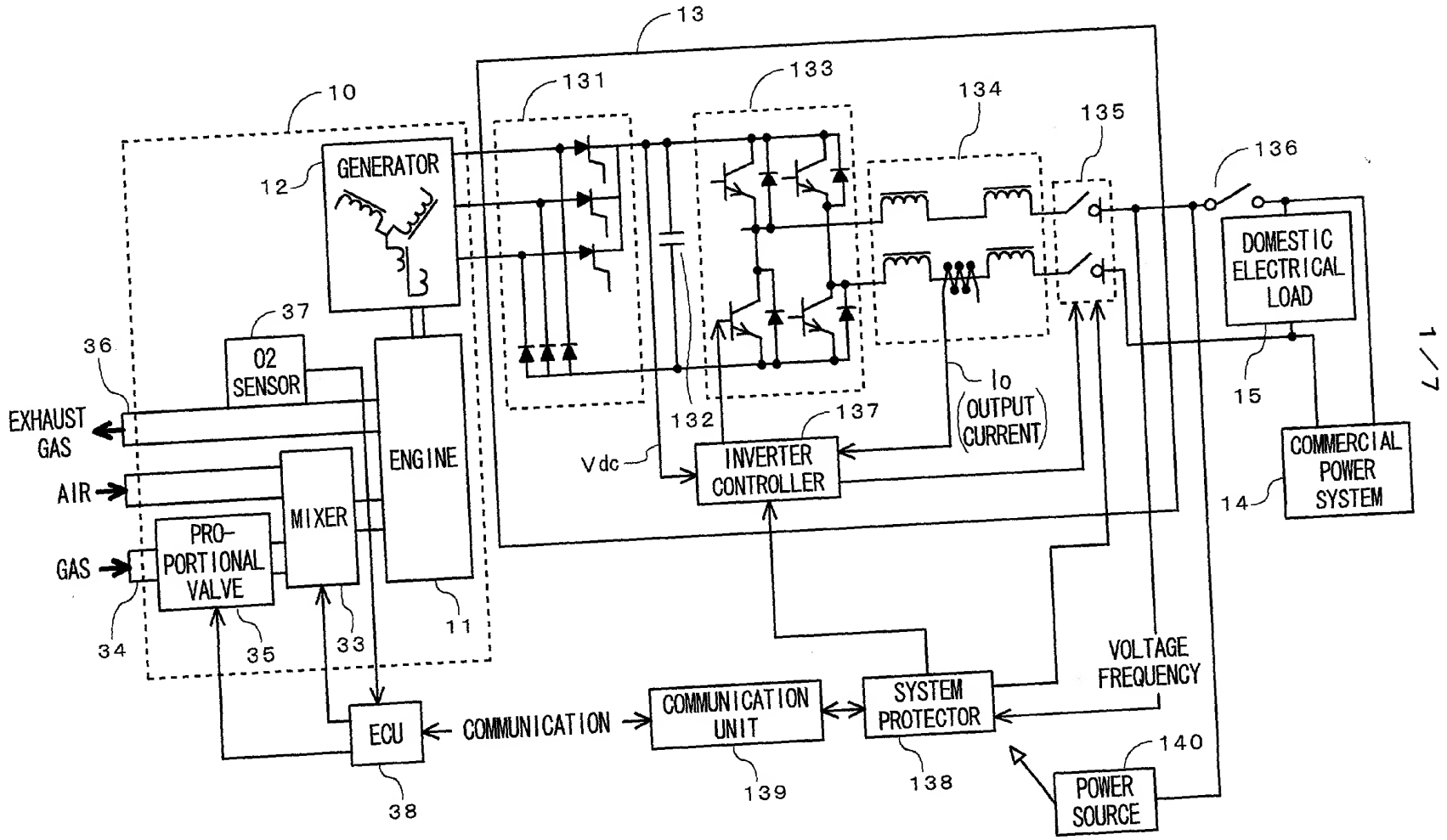


Fig. 2

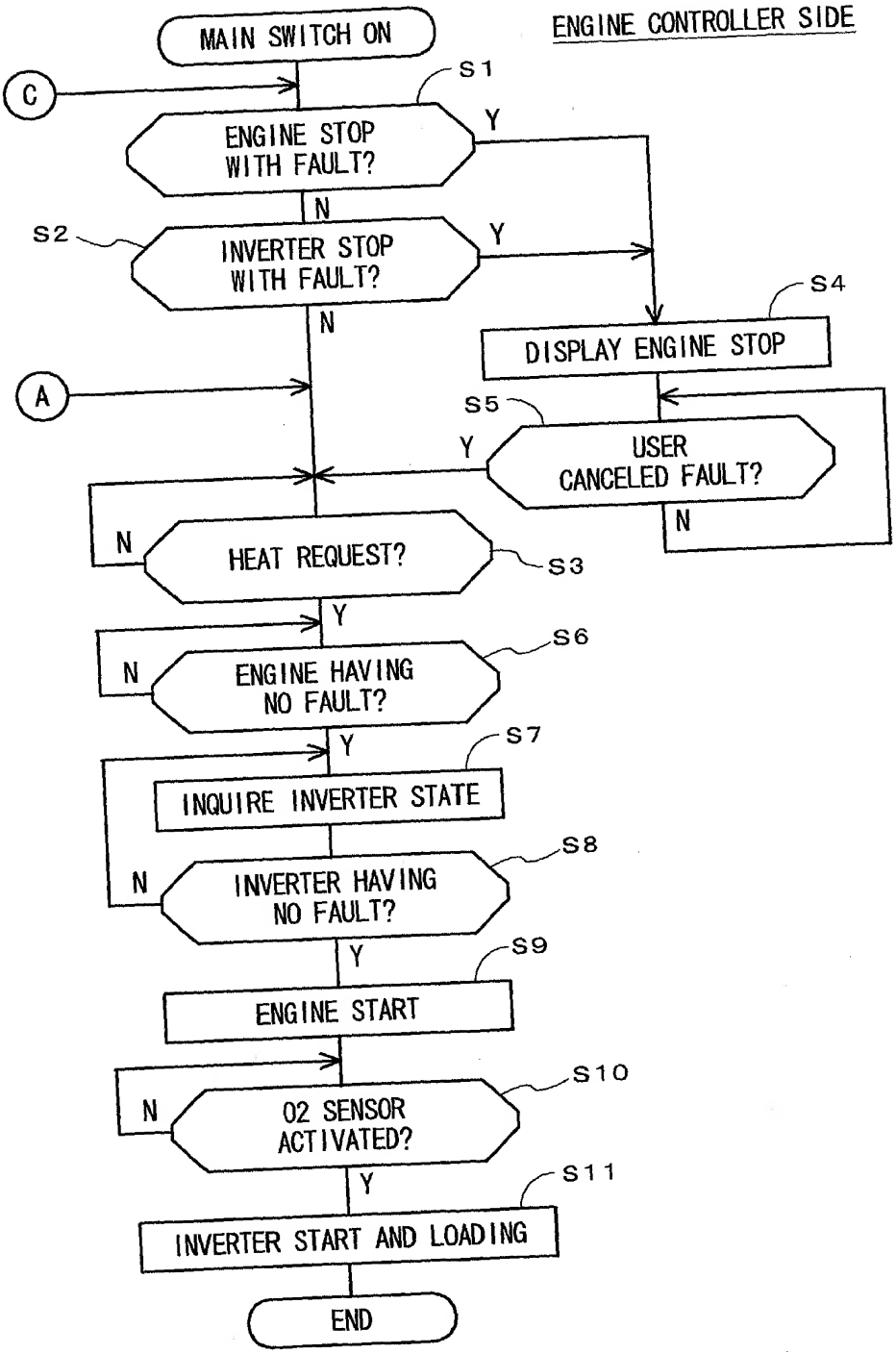

ENGINE CONTROLLER SIDE
MAIN SWITCH ON
C
S1
ENGINE STOP WITH FAULT?
Y
N
S2
INVERTER STOP WITH FAULT?
Y
N
S4
DISPLAY ENGINE STOP
A
S5
USER CANCELED FAULT?
Y
N
N
HEAT REQUEST?
S3
Y
S6
N
ENGINE HAVING NO FAULT?
Y
S7
INQUIRE INVERTER STATE
S8
N
INVERTER HAVING NO FAULT?
Y
S9
ENGINE START
S10
N
02 SENSOR ACTIVATED?
Y
S11
INVERTER START AND LOADING
END

Fig. 3

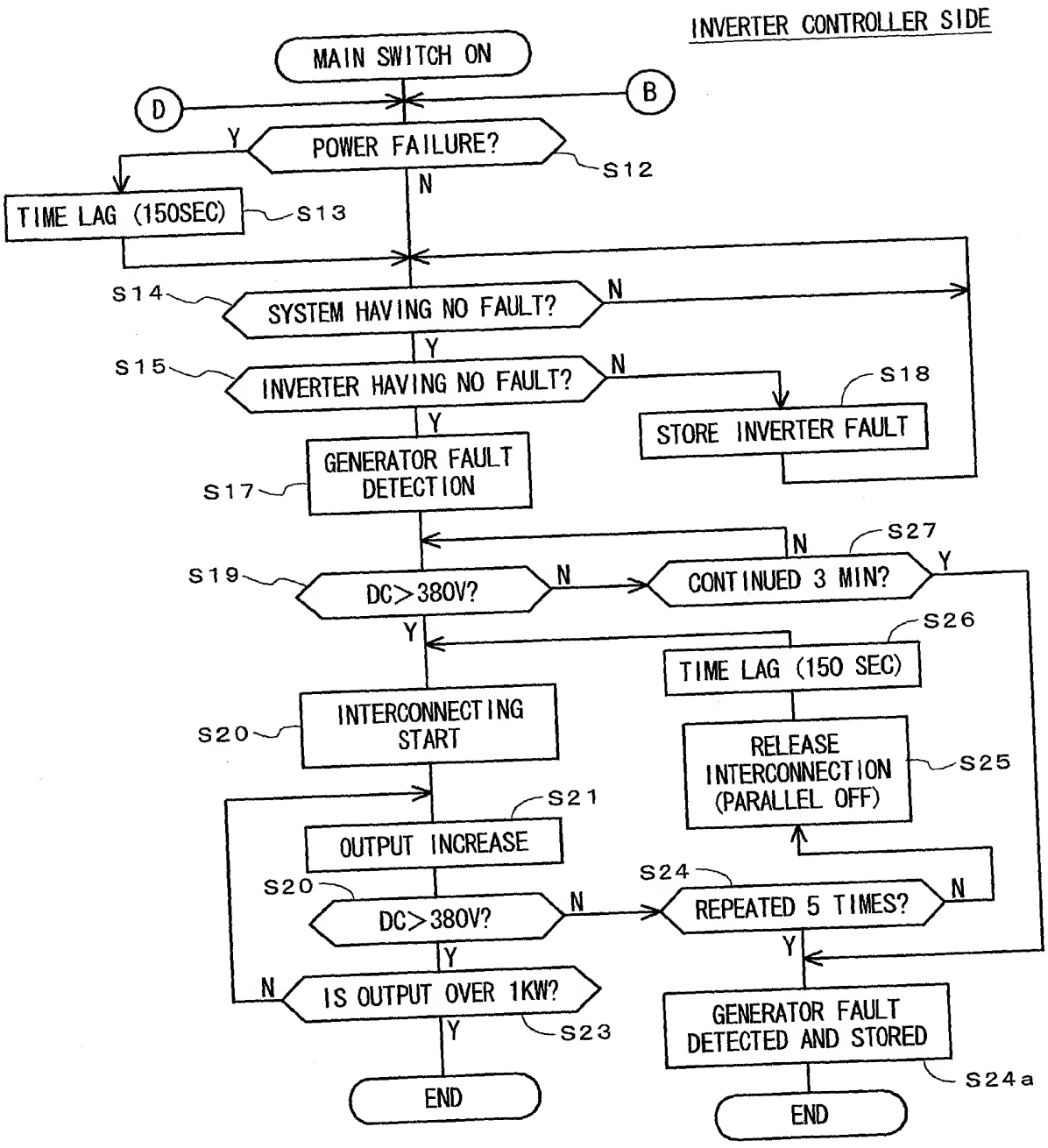

INVERTER CONTROLLER SIDE
MAIN SWITCH ON
D
B
POWER FAILURE?
S12
Y
N
TIME LAG (150SEC)
S13
S14
SYSTEM HAVING NO FAULT?
N
Y
S15
INVERTER HAVING NO FAULT?
N
S18
STORE INVERTER FAULT
Y
GENERATOR FAULT DETECTION
S17
S27
N
Y
S19
DC>380V?
N
CONTINUED 3 MIN?
Y
S26
TIME LAG (150 SEC)
INTERCONNECTING START
S20
RELEASE INTERCONNECTION (PARALLEL OFF)
S25
S21
OUTPUT INCREASE
S24
S20
DC>380V?
N
REPEATED 5 TIMES?
N
Y
Y
N
IS OUTPUT OVER 1KW?
Y
S23
GENERATOR FAULT DETECTED AND STORED
S24a
END
END

Fig. 4

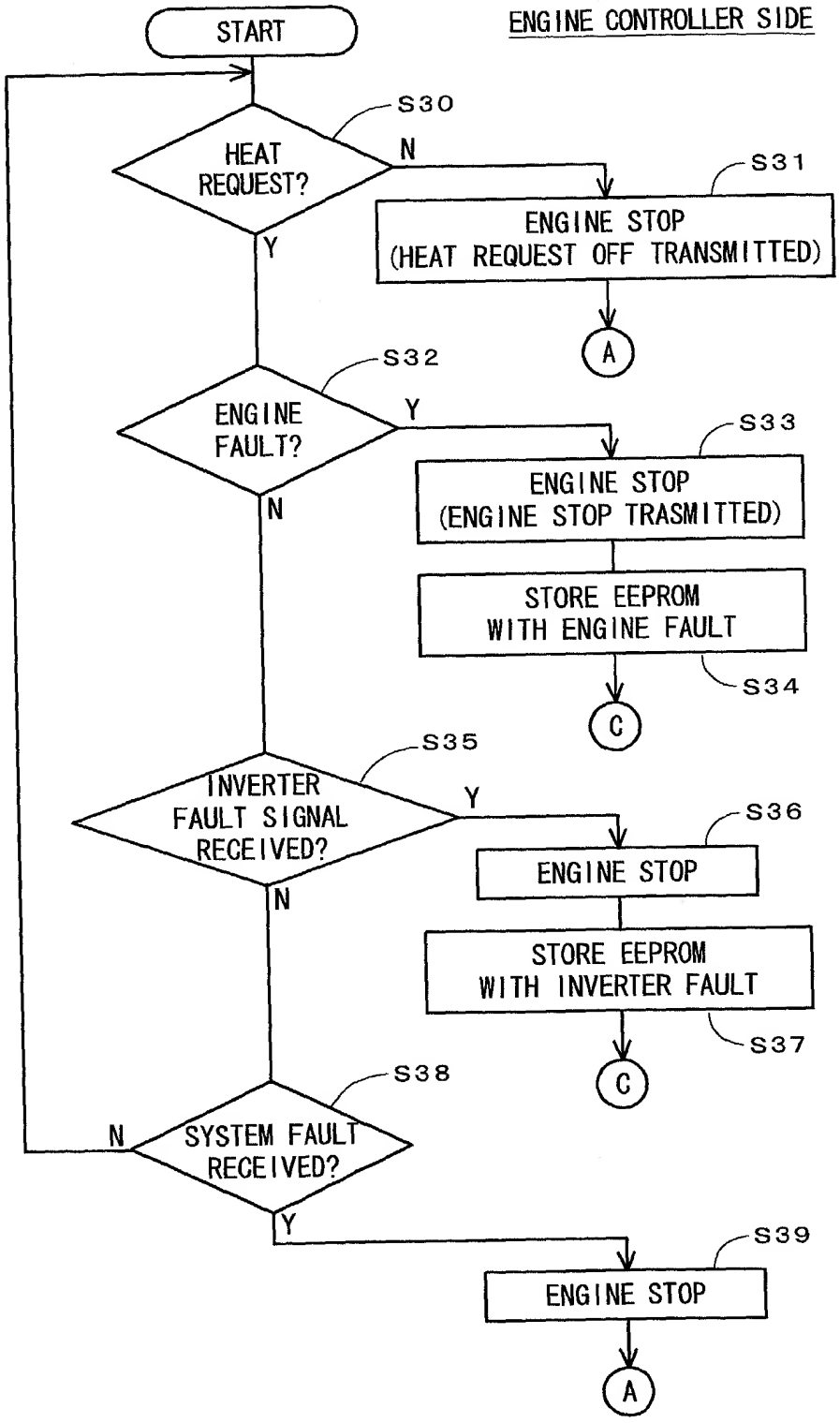

ENGINE CONTROLLER SIDE
START
S30
HEAT REQUEST?
N
S31
ENGINE STOP (HEAT REQUEST OFF TRANSMITTED)
Y
A
S32
ENGINE FAULT?
Y
S33
ENGINE STOP (ENGINE STOP TRASMITTED)
N
STORE EEPROM WITH ENGINE FAULT
S34
C
S35
INVERTER FAULT SIGNAL RECEIVED?
Y
S36
ENGINE STOP
N
STORE EEPROM WITH INVERTER FAULT
S37
C
S38
N
SYSTEM FAULT RECEIVED?
Y
S39
ENGINE STOP
A

Fig. 5

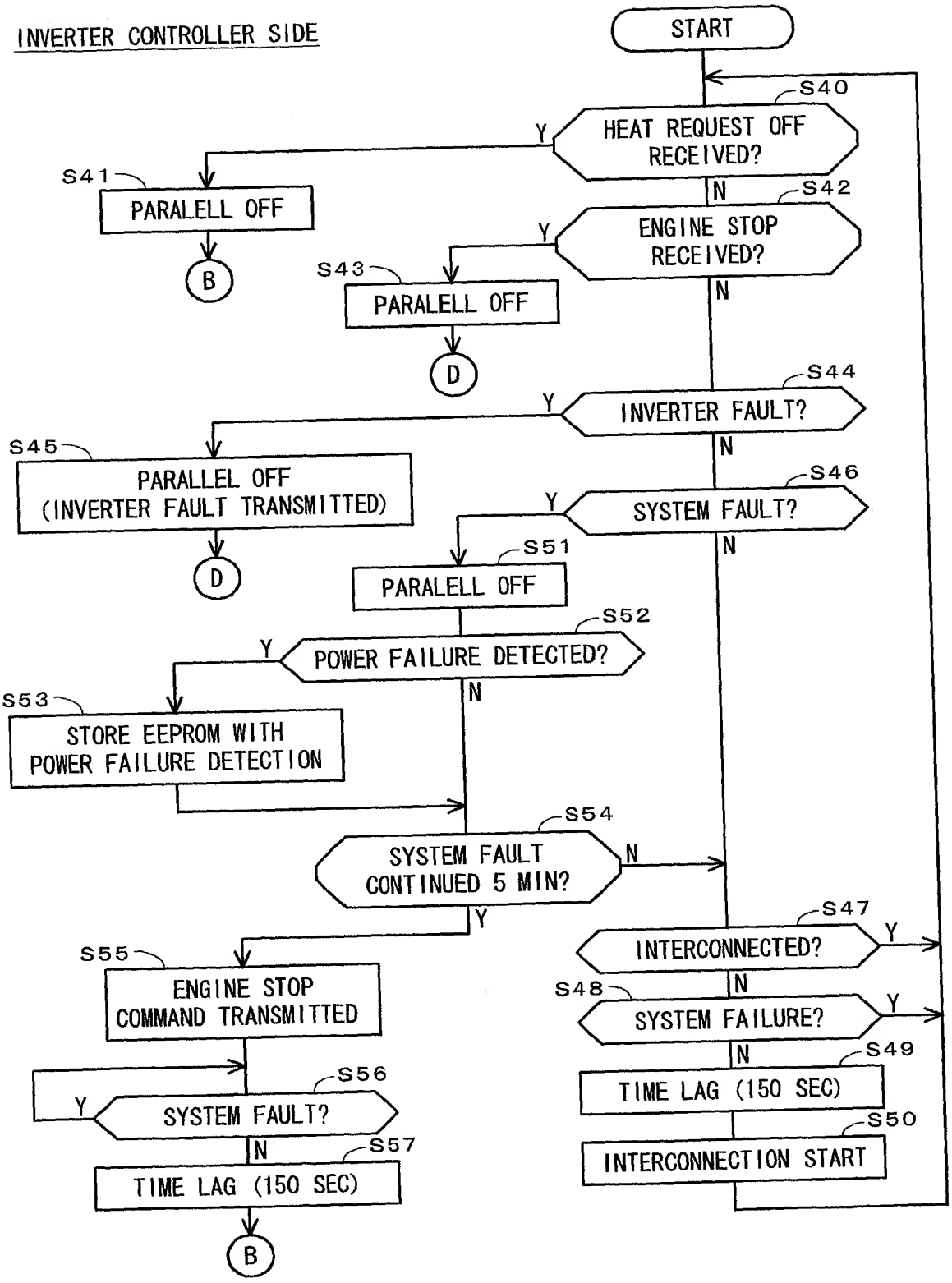

INVERTER CONTROLLER SIDE
START
S40
HEAT REQUEST OFF RECEIVED?
Y
N
S41
PARALELL OFF
B
S42
ENGINE STOP RECEIVED?
Y
N
S43
PARALELL OFF
D
S44
INVERTER FAULT?
Y
N
S45
PARALLEL OFF (INVERTER FAULT TRANSMITTED)
D
S46
SYSTEM FAULT?
Y
N
S51
PARALELL OFF
S52
POWER FAILURE DETECTED?
Y
N
S53
STORE EEPROM WITH POWER FAILURE DETECTION
S54
SYSTEM FAULT CONTINUED 5 MIN?
N
Y
S47
INTERCONNECTED?
Y
N
S48
SYSTEM FAILURE?
Y
N
S49
TIME LAG (150 SEC)
S50
INTERCONNECTION START
S55
ENGINE STOP COMMAND TRANSMITTED
S56
SYSTEM FAULT?
Y
N
S57
TIME LAG (150 SEC)
B

Fig. 6

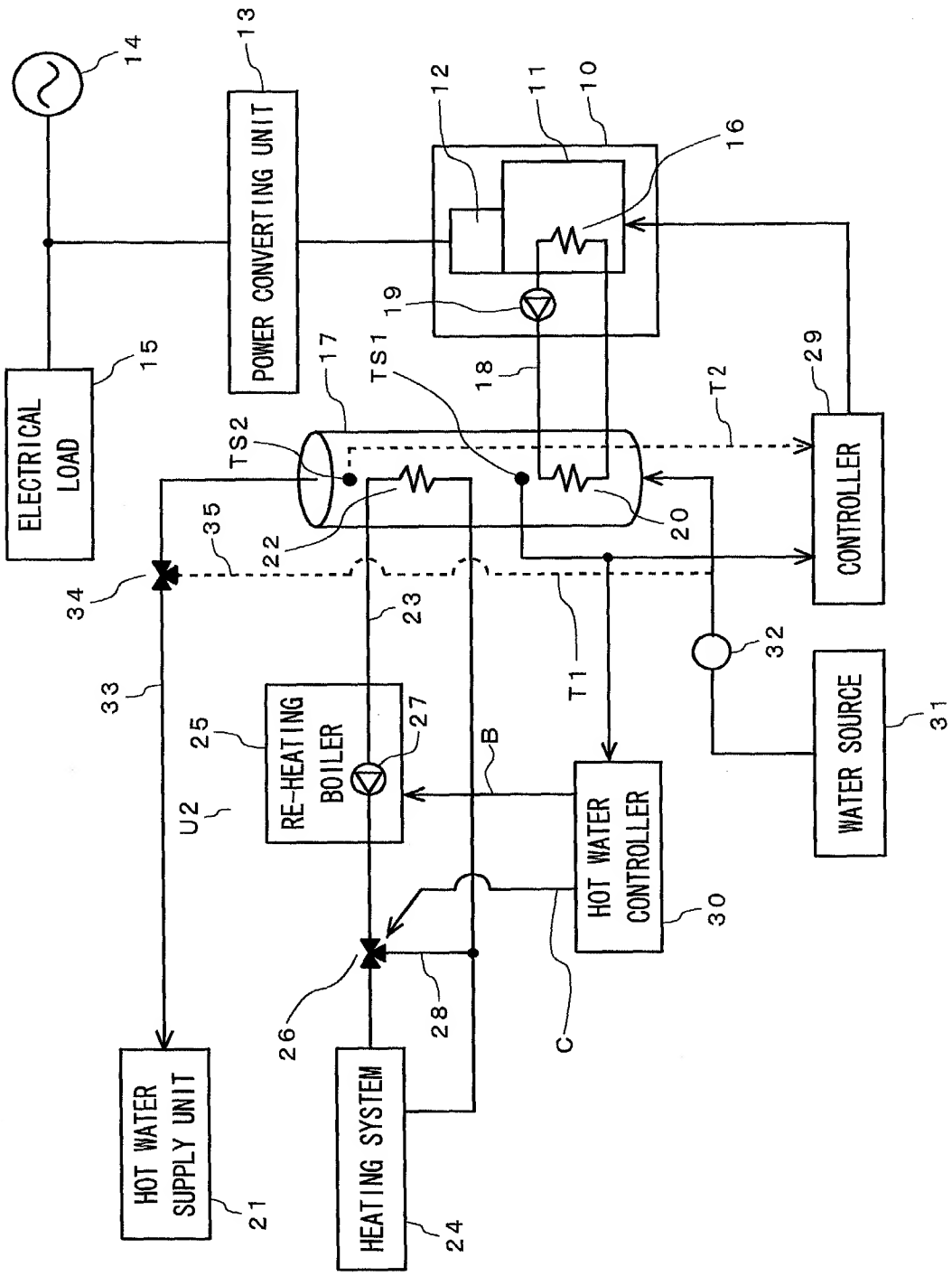
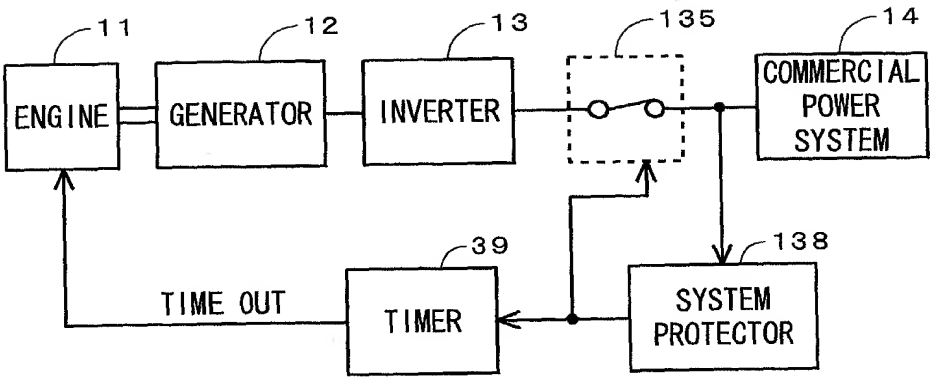

14
13
POWER CONVERTING UNIT
12
11
10
16
19
ELECTRICAL LOAD
15
17
TS1
18
T2
29
TS2
CONTROLLER
35
22
20
34
23
T1
32
33
25
RE-HEATING BOILER
27
B
WATER SOURCE
31
U2
HOT WATER CONTROLLER
30
26
28
C
HOT WATER SUPPLY UNIT
21
HEATING SYSTEM
24

Fig. 7



JP2000-236600